

**AMENDMENTS TO THE ABSTRACT**

Please replace the abstract of the currently filed specification with the attached replacement abstract.

## ABSTRACT

The present invention provides a method of discriminating singly-charged ions from multiply-charged ions by the use of an ion trap type mass spectrometer which is an inexpensive mass spectrometer. This is achieved by a mass-analyzing method using an ion trap type mass spectrometer equipped with a ring electrode and one pair of end cap electrodes to temporarily trap ions in a three-dimensional quadrupole field to mass-analyze a sample. The method includes a first step of applying a main high frequency voltage to the ring electrode to form a three-dimensional quadrupole field, a second step of generating ions in the mass analyzing unit or injecting ions from the outside and trapping ions of a predetermined mass-to-charge ratio range in the mass analyzing unit, a third step of applying a supplementary AC voltage having a plurality of frequency components between the end cap electrodes and scanning the frequency components of the supplementary AC voltage, and a fourth step of scanning the main high frequency voltage and ejecting ions from the mass analyzing unit, and detection thereof. With this, chemical noises can be reduced dramatically.